

Patent Claims:

1. Motorcycle brake system with at least one hydraulically operable front-wheel brake circuit, with a manually operable master brake cylinder that is connected to the front-wheel brake circuit and in communication with a brake fluid supply tank, with at least one inlet valve and outlet valve that can be activated for brake slip control in the front-wheel brake circuit,
characterized in that in a brake slip control operation, the pressure buildup in the front-wheel brake circuit (2) is determined, depending on the switching position of the inlet and outlet valves (21, 22), by the brake fluid volume which is available in the master brake cylinder (7) and displaceable exclusively manually into the front-wheel brake circuit (2), and the brake fluid volume prevailing in the master brake cylinder (7) is monitored to prevent exhaustion of the brake fluid volume.
2. Motorcycle brake system as claimed in claim 1,
characterized in that the brake fluid volume prevailing in the master brake cylinder (7) is monitored by way of sensing the position of a working piston (13) in the master brake cylinder (7) that displaces the brake fluid into the front-wheel brake circuit (2), for what purpose the master brake cylinder (7) is equipped with a travel sensor (10).

3. Motorcycle brake system as claimed in claim 2, characterized in that in order to evaluate signals of the travel sensor 10, an evaluating circuit includes an electronic control device (24) in which, depending on the result of evaluation, modification of the control algorithms intended for the inlet and outlet valves (21, 22) can be performed in such a manner that, with the decrease of brake fluid volume in the master brake cylinder (7), the volume consumption in the master brake cylinder (7) is minimized by appropriate switching of the inlet and outlet valves (21, 22).
4. Motorcycle brake system as claimed in claim 3, characterized in that the brake fluid volume available in the master brake cylinder (7) can be reduced during brake slip control to a reserve volume that is needed for the minimum braking deceleration, and in that the brake slip control for the front-wheel brake circuit (2) initiated by the control device (24) is discontinued when the reserve volume is reached.
5. Motorcycle brake system as claimed in any one of the preceding claims, characterized in that a rear-wheel brake circuit (4) that is operable independently of the front-wheel brake circuit (2) is provided, which can be operated mechanically and/or hydraulically, to what end there is a direct force-proportional mechanical and/or hydraulic connection between a manually operable brake lever or brake pedal (11) and a wheel brake (14) of the rear-wheel brake circuit (4).

6. Motorcycle brake system as claimed in any one of the preceding claims,
characterized in that the inlet valve (21) is arranged for brake pressure buildup in a hydraulic connection between the master brake cylinder (7) and the front-wheel brake circuit (2), and in that the outlet valve (22) is provided for brake pressure reduction into the supply tank (19) in a parallel connection to the inlet valve (21) between the front-wheel brake circuit (2) and the brake fluid supply tank (19).
7. Motorcycle brake system as claimed in any one of the preceding claims,
characterized in that the master brake cylinder (7) is structurally grouped with the supply tank (19), the travel sensor (10) and the inlet and outlet valves (21, 22) to form an independently manageable, operable front-wheel brake unit (8), and for pressure buildup in a brake slip control operation, the front-wheel brake unit (8) can be operated exclusively by means of a hand brake lever (12) or brake pedal that acts on the master brake cylinder (7).
8. Motorcycle brake system as claimed in any one of the preceding claims,
characterized in that the control device (24) forms an integral component of the front-wheel brake unit (8) which is preferably slipped onto the inlet and outlet valves (21, 22) for electrical contacting.

9. Motorcycle brake system as claimed in any one of the preceding claims,

characterized in that the front-wheel brake unit (8) includes a holding portion with a through-bore (25) for attachment at a steering rod (25) or at a motorcycle frame (26).